

SEATTLE CITY LIGHT
MATERIAL STANDARD

STANDARD NUMBER: **6840.1**
PAGE: 1 of 2
DATE: September 13, 1988
REV: June 20, 1997

FAULT LIMITER
GENERAL PURPOSE CURRENT-LIMITING FUSE, "TYPE X"

Description

This standard applies to high-voltage general purpose current-limiting fuses and accessories for use on an AC-grounded wye 27/15.5 kV system. These current-limiting fuses are to be used both in single-phase and three-phase applications.

The fuse shall be a non-expulsion silver element fuse and shall comply with the latest revision of ANSI C37.47 except as amended by this material specification.

This general purpose current-limiting fuse will be mounted in SMU-20 fuse holders in pad mount switchgear or SMD-20 overhead cutouts. The fuse will be used to protect distribution transformers and equipment against low-impedance, high current faults.

Construction

Weight: 12 pounds maximum

Housing: The fuse shall be sealed for outdoor use. The tube shall be reinforced fiberglass, coated with an ultraviolet-resistant two-part epoxy paint, and have an EPDM rubber-skirted sleeve. The fuse must have no external element solder joints.

Terminals: The top and bottom end terminals shall be suitable to retrofit the fuse for mounting in existing S&C Electric 27-kV SMU-20 fused units. The fuse must operate the indicator mechanism on the SMU-20 live parts after operation. A terminal bottom end fitting adapter shall be supplied with each fuse unit.

Electrical Specifications

Voltage Rating 15.5 kV phase-to-neutral and 27-kV three-phase on solidly-grounded wye system

Rated Continuous Current The fuse must meet ANSI 65E definition, ANSI 40E definition, or ANSI 25E definition as specified

Interrupting Rating Shall be a minimum of 50,000 amperes RMS symmetrical

Basic Insulation The BIL rating of the fuse shall be 125-kV

Radio Influence The RIV of the complete device, fuse and fittings, shall not be greater than 30 microvolts at 1 megahertz when energized at 17.4 kV

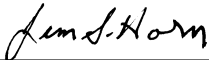
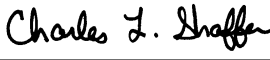


Leakage Distance The leakage distance of the fuse and assembly shall be equivalent to 19 inches of porcelain and shall be a material of proven dielectric integrity.

Labeling

In addition to the fuse markings as required under Section 6.2 of ANSI C37.47-1981, the manufacturer shall provide an identifying part number for the fuse and a part number for the end fitting, the date of manufacture, and the BIL rating. The fuse markings shall be legible and permanently installed on both the fuse and carton. The carton label shall also include the City Light stock number.

Packaging

Each fuse shall be packaged one to a carton, with the end fitting adapter attached to the bottom end terminal and instructions for mounting the fuse with S&C SM-20 fittings.

ORIGINATOR	STANDARDS COORDINATOR	STANDARDS SUPERVISOR	UNIT DIRECTOR
			

MATERIAL STANDARD**FAULT LIMITER
GENERAL PURPOSE CURRENT-LIMITING FUSE****Test Requirement**

The fuses must be 100% electrically tested before shipment to withstand 95% minimum melt energy without damage.

Data To Be Submitted for Qualification as an Approved Manufacturer

The manufacturer shall indicate any exceptions to this material specification and/or any test requirements as outlined in the latest revision of ANSI C37.47.

- a. Time-Current characteristic graphs on standard-size transparencies
- b. Maximum developed switching surge voltage
- c. Maximum let-through Ampere-Squared-Seconds
- d. Weight, dimensions, outside body material, and leakage distance
- e. Test data on contaminated insulator performance. The test shall be as suggested in Seattle City Light Standard 6840.3, *A Suggested Method for Contaminated Insulator Performance Test for 27-kV System Voltage*, or a City Light approved equivalent test method.
- f. Certified test data on 15.5 kV interrupting tests at critical current (that current which allows maximum energy let-through)
- g. Certified test data on interruption at 15.5 kV where the applied voltage immediately rises to 27 kV and is held for 10 minutes
- h. Certified test data on interrupting three-phase and phase-to-phase faults
- i. End fitting terminal adapter drawings
- j. Part number for fuse and part number for bottom end fitting retaining nut

Warranty

The manufacturer shall warrant the fault limiter to be free of defects of workmanship and materials when used for the applications as stated in this specification (three-phase operation at 27 kV) for a period of five years from the date of shipment.

Stock No.	Size	MAX I ² T	Approved Mfg. Cat. No.
685006	25x	31 kA	Cooper 15F025EHC2CN
685008	40x	110 kA	Cooper 15F040EHC2CN
685010	65x	240 kA	Cooper 15F065EHC2CN
685011	Nut, end fitting retainer		Cooper EF-H